

In the Specification

Please replace original pages 1-30 (Sequence Listing) with new pages 1-47 attached hereto.

Please replace original Figure 1 with new Figure 1 attached hereto.

Please replace original Figure 2B with new Figure 2B attached hereto.

Please insert the following new paragraphs in the "Brief Description of the Sequences" section on page 3, beginning at line 25:

SEQ ID NO. 10 is a nucleotide sequence that comprises a sequence encoding an EIL1 polypeptide.

SEQ ID NO. 11 is a nucleotide sequence that comprises a sequence encoding an EIL2 polypeptide.

SEQ ID NO. 12 is a nucleotide sequence that comprises a sequence encoding an EIL3 polypeptide.

SEQ ID NO. 13 is a nucleotide sequence that comprises a sequence encoding an EIN2 polypeptide.

SEQ ID NO. 14 is a nucleotide sequence that comprises a sequence encoding an EIN2 polypeptide.

SEQ ID NO. 15 is a nucleotide sequence that comprises a sequence encoding an EIN3 polypeptide.

SEQ ID NO. 16 is a nucleotide sequence that comprises a sequence encoding an EIN3 polypeptide.

Please substitute the following paragraph on page 3, beginning at line 27, through to page 4, line 17:

The subject invention concerns materials and methods for controlling agricultural traits in plants that are mediated by the plant hormone ethylene. One aspect of the invention concerns a

polynucleotide that comprises: (a) a nucleotide sequence encoding a mutant plant ethylene receptor, or a fragment or variant thereof, that is ethylene insensitive, and (b) operably linked to the nucleotide sequence encoding the mutant receptor, a regulatory sequence that promotes transcription and expression of the nucleotide sequence encoding the mutant receptor in plant cells that comprise the abscission zone of a plant. Genes encoding plant ethylene receptors, and the amino acid sequences of the encoded proteins, have been identified and sequenced for numerous plant species. Plant ethylene receptors include those designated in the art as ETR1, ETR2, ERS1, ERS2, and EIN4 (Chang *et al.*, 1993; Hua *et al.*, 1995; ~~Hua et al., 1998~~ Hua *et al.*, 1998a; Hua *et al.* 1998b; and Sakai *et al.*, 1998). ETR2 receptor sequences, and polynucleotides encoding them, are known for several plant species and include *Arabidopsis thaliana* (Genbank accession no. AF047975); cucumber (Genbank accession no. AB026500); apple tree (Genbank accession no. AF032448); and tomato (Genbank accession no. AF043085). Mutant alleles of these ethylene receptors that exhibit dominant insensitivity to ethylene have also been isolated and sequenced. Any polynucleotide sequence encoding a mutant ethylene receptor, or a fragment or variant thereof, that confers insensitivity to ethylene when expressed in a plant is contemplated within the scope of the present invention. As used herein, the term "operably linked" refers to a juxtaposition of the components described wherein the components are in a relationship that permits them to function in their intended manner. In general, operably linked components are in contiguous relation.

Please substitute the following paragraph on page 5, beginning at line 1:

Another aspect of the invention concerns materials and methods for inhibiting or reducing expression of genes that are involved in the ethylene signaling pathway in plants. These genes include, but are not limited to, *EIN2*, *EIN3*, and *EIN3-like (EIL)* genes (Alonso *et al.*, 1999; Chao *et al.*, 1997; Tieman *et al.*, 2001 (SEQ ID NO. 10; SEQ ID NO. 11; and SEQ ID NO. 12); Genbank accession nos. NM120406 (SEQ ID NO. 13) and AF141202 (SEQ ID NO. 14); Genbank accession nos. NM112968 (SEQ ID NO. 15) and AF004216 (SEQ ID NO. 16)). Antisense, cosuppression, RNA interference (RNAi), and gene mutagenesis technologies can be used to inhibit expression or function of *EIN* or *EIL* genes or gene products. Polynucleotides that provide for transcribed nucleic acid sequences that are at least partially complementary to a transcribed sequence of an *EIN* or *EIL*

gene are contemplated within the scope of the invention. Such polynucleotides are referred to herein as antisense polynucleotides and the sequences are antisense sequences. Transcription of the antisense sequence results in production of RNA which is at least partially complementary to RNA transcribed from an *EIN* or *EIL* gene. The polynucleotide does not have to be identical in sequence to or the same length as the endogenous *EIN* or *EIL* gene sequence. The polynucleotide used for antisense inhibition can be shorter in length than the full-length *EIN* or *EIL* sequence. For example, a polynucleotide can be used that corresponds to the 5'-end or the 3'-end of the endogenous *EIN* or *EIL* gene.

Please substitute the following paragraph on page 16, beginning at line 36:

Hua, J., Meyerowitz, E.M. (1998) (1998a) "Ethylene responses are negatively regulated by a receptor gene family in *Arabidopsis thaliana*" *Cell* 94:261-271.

Please substitute the following paragraph on page 16, beginning at line 39:

Hua, J., Sakai, H. Nourizadeh, S., Chen, Q.G., Bleecker, A.B., Ecker, J.R., Meyerowitz, E.M. (1998) (1998b) "EIN4 and ERS2 are members of the putative ethylene receptor gene family in *Arabidopsis*" *Plant Cell* 10:1321-1332.

Please substitute the following paragraph on page 17, beginning at line 17:

McCormick, S., Niedermeyer, J., Fry, J., Barnason, A., Horsch, R., Fraley, R.(1986) *Plant Cell Reports* 5:91-84 5:81-84.